In the Specification:

Please replace paragraph [0017] with the following:

Figures 2 and 3 illustrate the collimator assembly 30 comprised of a plurality of individual segments 36. Although only two individual segments 36 are illustrated in Figures 2 and 3, it should be understood that additional segments 36 may be included (see Figure 4). The collimator assembly 30 is comprised of a first collimator segment 38 that has a first left end 40 and a first right end 42 (it should be understood that the terms left and right are descriptive only). The first collimator segment 38 is comprised of a plurality of first segment longitudinal walls 44 each having a first segment depth 46. Although a variety of manufacturing techniques are contemplated for producing the first collimator segment 38, one embodiment contemplates casting the first collimator segment 38 out of tungsten or lead. A plurality of first latitudinal segments 48 are positioned between the plurality of first segment longitudinal walls 44 such that a plurality of first collimator chambers 50 is formed. Each of the first collimator chambers 50 preferably has a similar first collimator width 51. The plurality of first collimator chambers 50 are utilized to allow x-ray photons 16 to pass through the collimator assembly ~~10~~ 30 to reach the scintillator assembly 32 while reducing scatter radiation.

Please replace paragraph [0019] with the following:

[0019] The present invention provides a unique method and structure for combining the first collimator segment 38 and the second collimator segment 52 to form a collimator assembly ~~10~~ 30 that minimizes problems associated with unshielded interfaces between collimator segments. The present invention accomplishes this through the use of a first interlocking protrusion 66 formed on each of the plurality of first segment longitudinal walls 44. Each of the plurality of first interlocking protrusions 66 is formed as a portion of one of the first segment longitudinal walls 44 and comprises only a portion of the first segment depth 46. The first interlocking protrusions 66 extend past the last first latitudinal segment 48 defining the first right end 42. The first interlocking

protrusions 66 have a first protrusion height 68 and a first protrusion depth 70. The first protrusion height 68, depth 70, and the very geometry of the first interlocking protrusion 66 can be varied. One embodiment contemplates the first protrusion depth 70 is less than or equal to the first collimator width 51. Another embodiment contemplates the first protrusion height 68 being less than or equal to half of the first segment depth 46. Finally, although the first interlocking protrusion 66 can be formed in any geometric shape, illustrated embodiments contemplate block shaped protrusions (Figures 2, 3, 4 ~~5~~ and ~~7~~ 6) as well as triangular shaped protrusions (~~Figures~~ Figure ~~4~~ 5 ~~and 6~~).

Please replace paragraph [0020] with the following:

The first interlocking protrusions 66 are designed to mate and interlock with a plurality of second interlocking protrusions 72 formed on each of the plurality of second segment longitudinal walls 58. Each of the plurality of second interlocking protrusions 72 is formed as a portion of one of the second segment longitudinal walls 58 and comprises only a portion of the second segment depth 60. The second interlocking protrusions 72 extend past the beginning second latitudinal segment 62 defining the second left end 54. The second interlocking protrusions 72 have a second protrusion height 74 and a second protrusion depth 76. Each of the second interlocking protrusions 72 is designed to engage one of the first interlocking protrusions 66 such that a continuous sidewall segment 78 is formed between the first collimator segment 38 and second collimator segment 52. In this fashion, each of the first segment longitudinal walls 44 can be joined to one of the second segment longitudinal walls 58 by way of a continuous sidewall segment 78 without a vertical seam passing through the collimator assembly ~~10~~ 30. In this fashion scatter corruption can be minimized. Although the second interlocking protrusions 72 may be varied in a fashion similar to the first interlocking protrusions 66, they are preferably shaped so as to form the mirror negative image (see Figure 4) of the first interlocking protrusions 66. In this fashion the first and second protrusions 66,72 naturally mate to form the continuous wall segments 78. A

similar technique can be accomplished by forming the second locking protrusions 72 as simple mirror images (see Figure 7) and altering orientation of the adjoining collimator segments 36.